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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: BURNS et al.)	Docket No.: 3620-021
)	
Application No.: 09/228,954)	Examiner: JUSKA, Cheryl Ann
)	
Filed: January 12, 1999)	Confirmation No.: 7883
)	
Group Art Unit: 1771)	Customer No.: 33432

For: A SURFACE COVERING BACKING CONTAINING POLYMERIC MICROSPHERES AND
PROCESSES OF MAKING THE SAME

APPELLANTS' BRIEF ON APPEAL

September 8, 2003

Sir:

This is an appeal to the Board of Patent Appeals and Interferences (hereinafter, "Board") from the Examiner's November 7, 2002 final rejection of claims 23-34, 58-61, and 63-68 in the above-identified application. The appealed claims are set forth in the attached Appendix I.

I. THE REAL PARTIES IN INTEREST

The real party in interest, besides the named inventors, is Mannington Mills, Inc.

II. RELATED APPEALS AND INTERFERENCES

No other appeal or interference which would directly affect or be directly affected by or have a bearing on the Board's decision in this appeal is known to the appellants or the appellants' legal representative.

III. STATUS OF CLAIMS

The claims pending in the application are claims 23-34, 58-61, and 63-68.

Claims 1-22 were canceled without disclaimer or prejudice of the subject matter, and claims 64-68 were added by entry of the Amendment dated October 31, 2000. Furthermore, claims 35-57 and 62 were canceled without disclaimer or prejudice of the subject matter by the Amendment dated May 18, 2001.

A copy of the claims on appeal can be found in the attached Appendix I.

IV. STATUS OF AMENDMENTS

No amendments were made in response to the Final Office Action.

V. SUMMARY OF INVENTION

There is always a continuing effort to improve carpet tiles and 6-ft. wide roll goods. The disadvantages of the presently made carpet tiles and 6-ft. wide roll goods include poor dimensional stability, due to a hot lamination requirement (at elevated temperatures of about 350-360° F) of vinyl foam to the pre-coated carpet under extremely well-controlled tension conditions; dimensional instability due to inability to incorporate non-woven fiberglass fleece or scrim in the secondary backing composite; and poor delamination strength. The present invention provides a very clever and novel solution. The present invention, as discussed in detail below, relates to a secondary backing

comprising a thermoplastic material and polymeric microspheres dispersed in the thermoplastic material. (e.g., See pages 5 and 7 of the present application.) The thermoplastic material comprises a vinyl compound and at least one plasticizer.

The present invention further provides a textile substrate comprising a primary backing with textile fibers extending upwardly from the backing and forming a surface, and the secondary backing is fastened to the opposite of the primary backing.

In the present invention, a textile substrate is provided, which is preferably a modular tile or a 6-ft. wide carpet. These carpets have special dimensional stability needs and one cannot simply substitute broadloom carpets for modular tiles and 6-ft. wide carpets for this reason.

The present invention also addresses the problem of achieving a sufficiently cushioned material without having the problems associated with a high blow ratio in order to form the foamed secondary backing. This is achieved, in part, by using thermoplastic microspheres and optionally, but preferably, a blowing agent.

In another embodiment of the present invention, the secondary backing is casted onto the primary backing which has unique advantages with respect to an excellent lamination strength as further set forth in some of the claims.

VI. ISSUES

The issues remaining for review by the Board of Patent Appeals and Interferences are:

- A. The Examiner's rejection of claims 23, 24, 26-28, and 63 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB (GB 1 515 521)

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

in view J. Levinstein's *The Complete Carpet Manual*, page 27; L. Shoshkes' *Contract Carpeting*, chapter 4, pages 60-67; and Higgins (U.S. Patent No. 5,545,276); and further in view of Gerace (U.S. Patent No. 5,658,969).

- B. The Examiner's rejection of claims 25, 64, and 65 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, and Gerace.
- C. The Examiner's rejection of claims 29 and 30 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, and Gerace.
- D. The Examiner's rejection of claim 31 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, and Gerace.
- E. The Examiner's rejection of claims 32-34, 58, 59, and 61 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, Gerace, and further in view of Joslyn et al. (U.S. Patent No. 3,708,441).
- F. The Examiner's rejection of claims 66 and 68 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, Gerace, and further in view of Ervin et al. (U.S. Patent No. 3,819,463), and Rodriguez's *Principles of Polymer Systems*, 2nd Ed., page 362.
- G. The Examiner's rejection of claim 67 under 35 U.S.C. §103(a) as

being unpatentable over Tarkett AB, Levinstein, Shoshkes, Gerace,

Joslyn et al., and further in view of Ervin et al. and Rodriguez.

VII. GROUPING OF THE CLAIMS

As presently appealed, the groupings of the claims are as follows.

Claims 23-28, 61, and 63 stand or fall together;

Claims 58 and 61 stand or fall together;

Claim 64 stands or falls on its own;

Claim 65 stands or falls on its own;

Claims 29 and 30 stand or fall together;

Claim 31 stands or falls on its own;

Claims 32 and 34 stand or fall together;

Claim 33 stands or falls on its own;

Claims 59 and 66-68 stand or fall together; and

Claim 60 stands or falls on its own.

VIII. ARGUMENTS

A. The Examiner's rejection of claims 23, 24, 26-28, and 63 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB (GB 1 515 521) in view J. Levinstein's *The Complete Carpet Manual*, page 27; L. Shoshkes' *Contract Carpeting*, chapter 4, pages 60-67; Higgins (U.S. Patent No. 5,545,276); and further in view of Gerace (U.S. Patent No. 5,658,969).

1. The Examiner's rejection

At page 2 of the Office Action, the Examiner rejects claims 23, 24, 26-28, and 63

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

under 35 U.S.C. §103(a) as being unpatentable over GB 1 515 521, assigned to Tarkett AB in view of J. Levinstein's *The Complete Carpet Manual*, page 27; L. Shoshkes' *Contract Carpeting*, Chapter 4, pages 60-67; Higgins (U.S. Patent No. 5,545,276); and further in view of Gerace (U.S. Patent No. 5,658,969). With respect to Tarkett AB, it appears the reference to "GB 1 151 521" by the Examiner was made in error and that Tarkett AB corresponds to GB 1 515 521 as set forth in the PTO-892 submitted with the Office Action dated October 3, 2001.

The Examiner asserts that Tarkett AB describes a foamed material (which may be a polyvinyl chloride (PVC) plastisol) suitable for carpet backings, and, included in the foamed material, are microspheres of alumina silicate. The Examiner acknowledges that Tarkett AB does not explicitly teach the claimed primary backing, adhesive pre-coat, intermediate backing layer, or reinforcement layer. However, the Examiner asserts that the undisclosed layers are well-known in carpets, as indicated by Levinstein, Shoshkes, and Higgins. For example, the Examiner asserts that the diagram on page 27 of Levinstein illustrates that a conventional carpet is constructed of (a) face fibers tufted into a primary backing, (b) a backcoat of adhesive applied thereto to seal said fibers to said primary backing, and (c) a secondary backing for dimensional stability. Additionally, the Examiner asserts that Figure 34 at page 61 of Shoshkes illustrates a carpet construction. According to the Examiner, Shoshkes also describes that many carpets conventionally have an attached cushion, or foam backing. Furthermore, the Examiner states that Higgins describes a carpet comprising (a) a pile layer, (b) a primary backing, (c) an adhesive backcoat, (d) an adhesive layer for attaching, (e) a reinforcement layer, (f) a foam layer, and (g) a secondary backing.

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

At page 4 of the final Office Action, the Examiner responds to the appellants' argument that Tarkett AB does not teach or suggest a plastisol carpet backing and that latex and plastisol formulations are not equivalent to one another. The Examiner asserts that Example 1 of Tarkett AB illustrates that a latex composition is applied as a carpet backing. The Examiner acknowledges that Example 2 does not explicitly teach applying a plastisol to a carpet. However, according to the Examiner, the examples refer to "delamination strengths." Therefore, the Examiner concludes that Example 2 must be laminated or applied to a substrate in order to produce a property of delamination strength. The Examiner also asserts that the only substrate Tarkett AB teaches is the carpet in Example 1. Accordingly, the Examiner asserts that one is left to conclude that the substrate, which produces a delamination strength in Example 2, is also a carpet substrate. As such, the Examiner disagrees with the appellants' conclusion regarding the teachings of Tarkett AB.

In light of these references, the Examiner argues that it would have been obvious to one of ordinary skill in the art to employ an adhesive or pre-coat to the primary backing, and to apply a secondary or intermediate backing thereto, before applying the inventive foam backing. Motivation to do so would be to securely bond the pile fibers into the primary backing and to add dimensional stability to the carpet.

The Examiner acknowledges that the combined art of Tarkett AB, Levinstein, Shoshkes, and Higgins does not teach polymeric microspheres. However, the Examiner asserts that the undisclosed polymeric microspheres are well-known alternatives to ceramic microspheres. The Examiner asserts that Gerace teaches PVC plastisol coatings and adhesives having hollow thermoplastic microspheres therein. Additionally, the Examiner

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

believes that Gerace shows the use of thermoplastic microspheres to lower the coating density and increase other favorable properties.

At page 5 of the final Office Action, the Examiner responds to the appellants' argument that Gerace is non-analogous art. The Examiner asserts that while Gerace is not specific to carpet substances, Gerace is directed to plastisol coatings in general. According to the Examiner, since plastisol coatings are known to be employed in carpets, Gerace is analogous art.

Therefore, in view of the above arguments, the Examiner concludes that it would have been obvious to one of ordinary skill in the art to substitute polymeric microspheres for the ceramic microspheres of Tarkett AB, with the expectation of improved impact resistance and toughness, while reducing the density of the foam backing "even more." Thus, the Examiner rejects the identified claims as being obvious over the cited art. For the following reasons, the Examiner's rejection should be reversed.

2. The Appellants' Reply to the Examiner's rejection of claims 23, 24, 26-28, and 63 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB (GB 1 515 521) in view J. Levinstein's *The Complete Carpet Manual*, page 27; L. Shoshkes' *Contract Carpeting*, chapter 4, pages 60-67; Higgins (U.S. Patent No. 5,545,276); and further in view of Gerace (U.S. Patent No. 5,658,969).

a) The patentability of claims 23, 24, 26-28, and 63.

In terms of the claims at issue, the following summary is provided:

Claim 23 recites a textile substrate comprising a primary backing with textile fibers extending upwardly from the backing and forming a surface and a secondary

backing affixed to the bottom surface of the primary backing, wherein the secondary backing comprises at least one thermoplastic material having polymeric microspheres dispersed therein, wherein the thermoplastic material comprises a polymer or copolymer of a vinyl compound, and at least one plasticizer.

Claim 24 is dependent on claim 23, and defines the textile substrate as a carpet.

Claims 26-28 relate to different layers that provide the textile substrate according to claim 23. Claim 26 further recites that the textile substrate of claim 23 includes at least one adhesive or polymeric pre-coat layer located beneath the primary backing. Claim 27, which is dependent on claim 26, recites that the textile substrate also includes at least one intermediate backing layer located beneath the adhesive or polymeric pre-coat layer. Additionally, claim 28, which is dependent on claim 27, recites that the textile substrate also includes at least one reinforcement material layer or stabilizer layer located beneath the intermediate backing layer.

Claim 63 recites a surface covering comprising a primary backing; at least one adhesive or polymeric precoat layer located and affixed to the primary backing; optionally at least one intermediate backing layer located beneath and affixed to the adhesive or polymeric pre-coat layer; optionally at least one reinforcement material layer or stabilizer layer located and affixed beneath the adhesive or polymeric pre-coat layer or intermediate backing layer; and a secondary backing comprising at least one thermoplastic material located and affixed to either the adhesive or polymeric pre-coat layer or one of the optional layers; and wherein polymeric microspheres are dispersed in at least one of the layers except the primary backing, wherein said thermoplastic material comprises a

polymer or copolymer of a vinyl compound, and at least one plasticizer.

With respect to the merits of the rejection, the textile substrate and the surface covering set forth in the claimed invention are not taught or suggested by Tarkett AB, Levinstein Shoshkes, Higgins, and Gerace.

With respect to claim 23, and the claims dependent thereon, the wording of claim 23 does not support the Examiner's conclusion. In part, claim 23 recites that the thermoplastic material comprises a polymer or copolymer of a vinyl compound and at least one plasticizer.

It is important for the Board to appreciate that Tarkett AB makes one reference to a "textile carpet" and this only reference appears in Example 1. There is no reference to a textile carpet in any other example of Tarkett AB or in the general discussion. The Examiner takes the position that because "textile substrate" is mentioned in Example 1 of Tarkett AB, it would be fair to assume that all of the remaining discussion of Tarkett AB must relate to textile carpets. This is an unfair assumption by the Examiner and is pure speculation. Clearly, Tarkett AB relates to elastic foam materials which may have many uses. The Examiner's attempt to argue that the textile carpet of Example 1 means that Example 2 relates to textile carpets is unsupported and again pure speculation. Example 2 relates to PVC plastisols for mechanical foaming. The mention of delamination strength is simply a measure of the strength of a foam layer. Delamination does not automatically mean a textile carpet, and delamination is used in all technical areas involving laminates. Again, the Examiner provides no support to make this assumption, and it is again an unfortunate speculation on the part of the Examiner. A rejection cannot

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

be upheld based on assumptions and speculations on the part of the Examiner. To the contrary, a rejection must be fully supported by the cited art which is not the case here.

As shown in the present application, for instance at pages 1-6, latex chemistry, which is aqueous, is quite different from vinyl chemistry, which is non-aqueous. The chemistries are quite different. Thus, Tarkett AB does not teach or suggest a textile carpet using PVC with a plasticizer, but only shows the preparation of PVC plastisols for mechanical foaming and does not provide any teaching or suggestion as to its ultimate use. One would think that if Example 2 was intended for a textile carpet, Example 2 would also mention that the material could be used in the same manner, but this is not the case. This is not surprising since as described at pages 1-6 of the present application, SBR-latex backed carpets are quite different in structure and utility versus vinyl-backed carpets. This point will be further explained throughout this Brief on Appeal.¹

With respect to the secondary references of Levinstein, Shoshkes, and Higgins, while these references may show various carpet layers, no teaching or suggestion exists for using these particular types of layers with the carpet of Tarkett AB. As mentioned above, Tarkett AB simply describes a textile carpet in general for strictly the latex composition of Example 1 of Tarkett AB. While it is difficult to combine the specific carpet structures of the secondary references with Tarkett AB, since Tarkett AB does not

¹ The vinyl backed products are engineered products with a different cross section and typically use a non-woven fiberglass fleece or scrim. The unique properties of vinyl backed products, such as superior dimensional stability, double moisture barrier, high wet tuft bind, chemically weldable carpet seams, and ability to withstand repeated wet cleanings, are not exhibited by 12-ft. wide SBR-backed carpet.

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

describe exactly what layer Example 1 would serve, even if the secondary references are somehow combined with Tarkett AB, one still would not achieve the claimed invention. As described previously, a textile carpet of Tarkett AB would contain a latex formulation which is quite different from the vinyl textile substrate of claim 23 and the claims dependent thereon, as well as claim 63.

With respect to Gerace, this reference is not applicable to carpet technology, i.e., it is non-analogous art. More specifically, the Gerace abstract refers to plastisol coatings and adhesives, not carpets or carpet layers. A typical use of the Gerace technology is automobile underbody coatings, sealer coatings and the like, as noted in Gerace at column 1, lines 42-51. The disclosed applications, coupled with the extended discussion of fillers, as set forth at columns 17 and 18, suggest that the Gerace foams are relatively hard, unyielding products capable of withstanding direct contact with water and impinging objects, since naturally the underbodies of automobiles get wet and sustain impact from projectiles and the like. Such foams would appear to be utterly unsuitable as the backing for a carpet, which clearly requires a flexible and impact absorbing backing, not a hard material.

Gerace provides no indication that a person skilled in the art would consider a technology from automobile undercoatings as applicable to a carpet. The technology differences between the two items are simply too great. From the standpoint of either structure or function, a hard automobile undercoat is not equivalent to a flexible carpet backing. The rejection should be reversed based alone on Gerace being non-analogous art.

Additionally, with respect to Gerace, the Examiner indicates that the expectation

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

of improved impact resistance and toughness, while reducing the density of the foam backing would be important in carpet making technology. The Examiner does not explain precisely why such factors would be so important in carpet applications, given that the applications are so vastly different. A carpet is not a car, and a coating/adhesive for cars is not a backing for carpets. While carpets must withstand foot traffic, the kinds of impacts a carpet receives are different in kind from those a car receives. Additionally, as noted in Gerace at column 1, lines 45-51, for reasons of fuel economy, a car must be as light as possible; however, weight consideration is less important in a carpet. Gerace is clearly non-analogous art, and the Examiner has not provided any rationale why a person skilled in the art would consider the teachings of Gerace applicable to carpet technology.

Additionally, with respect to the Examiner's comments in response to the appellants' previous arguments with respect to Gerace, an analogous art must be from the same field of endeavor, regardless of the problem addressed. If the art is not within the same field of endeavor, it must still be reasonably pertinent to the particular problem involved. The claimed invention relates to textile substrates and surface covering backings containing polymeric microspheres and processes of making the same and solves the problem of carpets having poor dimensional stability, having low and uneven delamination strength of secondary foam backing, and having some open cells. In contrast, Gerace refers to plastisol coating and adhesives, not carpets. A typical use of the Gerace technology is in automobile underbody coatings, sealer coatings and the like, as noted in Gerace at column 1, lines 42-51. Moreover, the foams in Gerace are relatively hard and unyielding products that must withstand direct contact with the weather. Thus,

Gerace and the claimed invention are not from the same field of endeavor and Gerace is not reasonably pertinent to the particular problems involved in carpeting.

Furthermore, the Examiner has not explained how one would be motivated to substitute the alumina silicate microspheres of Tarkett AB with the microspheres of Gerace. There is absolutely no teaching or suggestion for doing so and the Examiner simply assumes that such a substitution would work. It appears the Examiner is using an "obvious to try" standard and is using a large amount of hindsight to reconstruct the claimed invention with numerous references which are merged together by the Examiner's hindsight. The Examiner's reliance on the many references still does not teach or suggest the claimed invention.

For the above reasons, the rejection should be reversed.

B. The Examiner's rejection of claims 25, 64, and 65 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, and Gerace.

1. The Examiner's Rejection.

At page 2 of the final Office Action, the Examiner rejects claims 25, 64, and 65 under 35 U.S.C. §103(a) as being unpatentable over the cited Tarkett AB, Levinstein, Shoshkes, and Gerace. The Examiner indicates that Tarkett AB describes a foamed material suitable for carpet backings, and, included in the foamed material, are microspheres of alumina silicate. The Examiner acknowledges that Tarkett AB does not explicitly teach the claimed primary backing, adhesive pre-coat, intermediate backing layer, or reinforcement layer. However, the Examiner asserts that the undisclosed layers are well-known in carpets, as indicated by Levinstein, Shoshkes, and Higgins.

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

At page 4 of the final Office Action, the Examiner responds to the appellants' argument that Tarkett AB does not teach or suggest a plastisol carpet backing and that latex and plastisol formulations are not equivalent to one another. According to the Examiner, the examples in Tarkett AB refer to "delamination strengths." Therefore, the Examiner concludes that Example 2 of Tarkett AB must be laminated in order to produce a property of delamination strength. The Examiner also asserts that the only substrate taught in Tarkett AB is a carpet in Example 1.

The Examiner acknowledges that the combined art of Tarkett AB, Levinstein, Shoshkes, and Higgins does not teach polymeric microspheres. However, the Examiner asserts that Gerace teaches PVC plastisol coatings and adhesives having hollow thermoplastic microspheres therein. At page 5 of the final Office Action, the Examiner responds to the appellants' argument that Gerace is non-analogous art. The Examiner asserts that while Gerace is not specific to carpet substances, Gerace is directed to plastisol coatings in general. According to the Examiner, since plastisol coatings are known to be employed in carpets, the Examiner contends that Gerace is analogous art.

The Examiner states that although the cited art does not explicitly teach broadloom carpet, modular carpet tile, or wide roll carpet, the undisclosed types of carpets are well-known in the carpet industry. The Examiner then gives Official Notice that broadloom, carpet tiles, and wide roll carpet are conventional types of carpet. Therefore, the Examiner asserts that Tarkett AB inherently applies to the claimed type of carpets. In the alternative, the Examiner asserts that it would have been obvious to one of ordinary skill in the art to employ the Tarkett AB invention in the known conventional forms of carpet, motivated by

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

the application of the inventive foam backing to standard carpet protection production lines.

At page 3 of the final Office Action, the Examiner responds to the appellants' arguments dated August 26, 2002 regarding the Examiner's conclusion that PVC plastisol backings are known to be applicable in each type of carpet (i.e., broadloom, carpet tiles, and wide roll). Citing, P. Ellis, *Carpet Substrates*, chapters 7 and 8, pages 71-98 (1973), the Examiner asserts that PVC backings for conventional tufted broadloom and/or wide roll carpet are known, as well as PVC backings for carpet tiles.

The Examiner also states that the Declarations filed on August 26, 2002 are insufficient to overcome the rejections because the Declarations address an issue (i.e., interchangeability) which is not asserted by the Examiner. Thus, the Examiner considers the Declarations to be irrelevant to the present rejection. According to the Examiner, the Official Notice was given for the mere fact that broadloom, carpet tiles, and wide roll carpet are conventional forms of carpet and that PVC plastisol backings are known to be applicable to each type of carpet despite the differences in final structure of the carpet types, rather than for interchangeability of the various forms of carpet as asserted by the appellants.

For the following reasons, Examiner's rejection should be reversed.

2. The Appellants' Reply to the Examiner's rejection of claims 25, 64, and 65 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, and Gerace.

a) The patentability of claim 25.

In terms of the claim at issue, the following summary is provided:

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

Claim 25 is dependent on claim 23. Claim 25 recites, in part, that the textile substrate is a broadloom carpet, modular tile, or wide roll carpet.

The arguments set forth above with respect to the patentability of claims 23, 24, 26-28, and 63 in view of the same cited art applies equally here, and the arguments are incorporated in their entirety by reference herein.

As stated previously, the Examiner takes the position that the mention of textile carpet solely in Example 1 of Tarkett AB relating to a latex formulation would equally apply to the vinyl composition of Example 2 of Tarkett AB, even though Tarkett AB does not mention such a use or structure in Example 2. As stated above, it is an assumption made by the Examiner and is unsupported by Tarkett AB and is pure speculation. In addition, as stated above, Gerace is non-analogous art and does not relate to textile substrates or surface coverings used in the carpet industry. The deficiencies of Gerace and its uncombinability with the primary reference of Tarkett AB are addressed above.

The rejection of claim 25, and as described separately below with respect to claims 64 and 65, relates specifically to the type of carpet being made. It is important for the Board to appreciate that Tarkett AB does not mention any specific type of carpet, but only states "textile carpet." The Examiner makes the assumption that this would cover any type of carpet, including broadloom carpet, modular type, or wide-roll carpet, even though each of these types of carpet have specific structural needs and one cannot take the same technology used, for instance in broadloom carpet, and apply it to modular tiles. This is explained in significant detail in the Declarations which are attached as Appendix II. The discussion below with respect to the patentability of claim 25 will be even more

important with respect to claims 64 and 65 argued separately below. To avoid repetition, the main discussion concerning these various types of carpets is presented with respect to the patentability of claim 25; however, this same argument and the Board's understanding of the different types of carpets will be even more important with respect to the patentability of claims 64 and 65.

The construction and components of carpet tiles and 6-ft. vinyl backed roll goods are completely different. The vinyl backed products are engineered products with a different cross section and typically use a non-woven fiberglass fleece or scrim. The unique properties of vinyl backed products such as superior dimensional stability, double moisture barrier, high wet tuft bind, chemically weldable carpet seams, and ability to withstand repeated wet cleanings, are not exhibited by 12-ft. wide SBR-backed carpet, hence, SBR-backed 12-ft. wide broadloom carpet and 18" x 18" vinyl backed carpet tiles or 6-ft. wide vinyl backed roll goods are different products.

Broadloom carpets differ from modular tiles, which differ from 6-ft. wide roll goods. Specifically at pages 1-5 of the present application, the different construction and properties needed for modular tiles are discussed and compared to broadloom carpets. It is clear that designs used in broadloom carpets are not applicable to modular tiles or 6-ft. wide roll goods. In fact, page 2, lines 9 and 10 of the present application specifically states that with respect to carpet tiles and 6-ft. wide roll goods "[t]hey are different in properties and end use applications compared to traditional 12-ft. wide SBR latex back carpets." The present application further states that the construction and components of carpet tiles and 6-ft. wide roll goods are completely different from broadloom carpets and that the needs of

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

such 6-ft. wide goods and tiles are significantly different. Accordingly, ample evidence in the present application clearly shows that the various forms of carpets are not interchangeable and are not similar to one another; therefore, the carpet described in Tarkett AB does not "inherently" include all forms of carpets.

With respect to the Examiner's assertion that it would be obvious to one of ordinary skill in the art to use the invention of Tarkett AB in known conventional forms of carpets, again, the present application adequately responds to the Examiner's position by showing that the functional requirements and the structure of such various forms of carpets are significantly different and one skilled in the art would not simply take broadloom carpet knowledge and make carpet tiles and 6-ft. wide roll goods.

Furthermore, with respect to Tarkett AB, it is respectfully noted that the reference to "textile carpet" in Tarkett AB is with respect to the latex composition in Example 1 and as pointed out in pages 1-6 of the present application, a latex formulation differs from the formulations of the claimed invention. Further, the latex formulations set forth in Example 1 of Tarkett AB do not contain a plasticizer. As indicated, latex formulations can be useful in 12-ft. broadloom carpets, but are generally not useful in other types of carpets.

However, the following comprehensive discussion is provided to supplement the information set forth in the application, and the arguments set forth above. This discussion, which includes a considerable amount of background material, and is supported by two Declarations (enclosed herewith as Appendix II), is provided to emphasize the differences between modular carpet tiles and other types of carpet, and to explain in additional detail why a person skilled in the art of carpet making would not consider a modular carpet tile to

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

be interchangeable with other types of carpet. The appellants believe that the comprehensive nature of this discussion and the supporting Declarations will settle these issues insofar as the pending application is concerned. The following information is based on the Declarations attached as Appendix II.

Carpet comes in various types, such as 12-ft. broadloom carpets, 6-ft. wide roll carpets, and modular carpet tiles. Each of these types are structurally different from each other. Modular carpet tiles are gaining a greater share of the market for carpets in the United States, for a variety of reasons, and therefore new types of carpet tiles, and methods for making these tiles, are in particular demand.

Modular carpet tiles have a number of significant advantages over other types of carpets. For instance, all carpets show wear in high traffic areas. Often, the bulk of the carpet will still be serviceable, but the presence of significant wear in a high traffic area will require the replacement of the entire broadloom carpet. By contrast, carpet tiles are removable and can be replaced in increments. In fact, carpet tiles can even be rotated, just like automobile tires, with worn tiles relegated to less critical areas. The option of removing or replacing individual carpet tiles is a significant advantage of carpet tiles, and is of particular importance in "open office" situations, in which the floor plans must be rearranged to accommodate changes in office space configuration and work station accommodations. Additionally, modular tiles simplify access to utilities, since individual tiles can be removed as needed without harm to the carpet. This is in direct contrast to broadloom carpets, which are permanently affixed to the floor, and only can be removed with great difficulty. Sometimes the removal of the broadloom carpets damage the carpet

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

and the carpet cannot be reused, or at least has been altered unfavorably in appearance. These factors are well known in the industry. In fact, some building codes even prescribe the use of modular carpet tiles in commercial or industrial settings, so as to simplify access to electrical installations and other utilities.

From the discussion above, one can see that modular carpet tiles offer a significant advantage over other types of carpet. The advantage of modular carpet tiles is reflected in the greater market share being assumed by modular carpet tiles. However, producing satisfactory modular carpet tiles at acceptable cost is not straightforward.

Modular carpet tiles simply cannot be manufactured from 12-ft. broadloom carpets. While it might appear reasonable to a person without a thorough background in carpet making technology to assume that one could cut carpet tiles from a larger piece of carpet, such as a 12-ft. broadloom carpet, this approach would fail, for the following reasons.

All carpets are subject to stresses and pressures during normal usage. In 12-ft. broadloom designs, these stresses and impacts are spread across the wide surface of the carpet, thus damping the effect of any particular stress or strain. By contrast, each carpet tile is isolated and must bear the entire stress or strain that is applied to it. Additionally, the edges of the carpet tile cannot lift or shift appreciably, even under heavy impact or torsion, otherwise the uniform appearance of the carpet will be affected.

Because of this, dimensional stability and impact resistance are of far greater concern in modular tiles than in other types of carpet. In other words, modular carpet tiles must be significantly more resistant to impacts and stresses than a broadloom carpet, since each carpet tile is isolated, and because each tile must stay in place even under heavy

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

impact, without being able to dissipate the stresses and strains applied to it to a surrounding region, as would be the case with a broadloom carpet.

If one attempted to cut carpet tiles from a conventional broadloom carpet, the tiles would quickly fail, since they would lack the structural strength and dimensional stability necessary to withstand the applied stresses and impacts. In order to have an acceptable service life, modular carpet tiles must have superior physical and structural characteristics, and also must be formed by different methods, than broadloom carpets.

The attached Declarations also support the conclusion that modular carpet tiles are very different from wide roll goods, and calls into question the Examiner's assertion that technology applicable to wide roll carpet goods can be readily extended into applications involving modular carpet tiles. As the Examiner has not provided any evidence to refute the points made, it would appear that this matter should be settled.

With respect to chapter 7 of Ellis, chapter 7 relates to material used for a back-coating of floor coverings. With respect to Ellis, Ellis was not set forth in the actual rejection of these claims. Accordingly, for this reason, the Board should not consider any arguments presented by the Examiner with respect to Ellis since it was not technically applied in the rejection. Should the Board disagree with not considering Ellis, then the following comments are provided. According to chapter 7, PVC can be used as backing material for carpets. According to chapter 7, PVC produces foams of good tensile and tear strength values, they have good abrasion resistance and PVC also provides stronger tuft retention than that of latex compounds. Furthermore, chapter 8 of Ellis briefly discusses the various forms of backing materials available. According to chapter 8, PVC can be used

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

either as a paste or a foam for backing materials. More specifically, Ellis at pages 84 and 85 describes the use of PVC, either in a paste form or a foam as a tile backing. However, Ellis does not teach a secondary backing comprising at least one thermoplastic material wherein the thermoplastic material includes a polymer or copolymer of a vinyl compound and at least one plasticizer.

The Declarations (enclosed herewith as Appendix II) clearly illustrate that the PVC plastisol backings are not known to be used as secondary backings in carpet tiles. Furthermore, the Examiner's comment that the Official Notice was given for the fact that broadloom, carpet tiles, and wide roll carpet are conventional forms of carpet and that PVC plastisol backings are known to be applicable to each of the carpet types despite the differences in their final structure is incorrect. The Examiner states that although the references do not teach broadloom carpet, modular carpet tile, or wide roll carpet, the description of "carpet" according to Tarkett AB inherently includes the claimed types of carpet. Therefore, the Examiner is improperly interchanging broadloom carpet, carpet tiles, and wide roll carpet for the carpet referred to in Tarkett AB.

Accordingly, for the reasons set forth above, the combination of Tarkett AB, Levinstein, Shoshkes, and Gerace does not teach or suggest the claimed invention and the rejection of claim 25 should be reversed.

b) The patentability of claim 64.

Claim 64 is dependent on claim 23. Claim 64 recites that the textile substrate is a modular carpet tile.

The comments and arguments set forth above with respect to the patentability of

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

claims 23 and 25 apply equally here and are incorporated in their entirety by reference herein. As stated above, claim 64 specifically relates to a modular carpet tile. Tarkett AB does not teach or suggest a modular tile or carpet tile and makes absolutely no reference to a carpet tile. The Examiner attempts to take the position that all carpets are known and therefore Tarkett AB must also relate to a carpet tile. This is an unfair assumption and is purely speculative. The attached Declarations and the present application clearly show a structural difference with respect to modular carpet tiles and other types of carpet. There is absolutely no reason why one skilled in the art would look to Tarkett AB and come to the conclusion that it relates to modular tiles, when there is no teaching or suggestion with respect to this particular and unique form of carpet.

In addition, as set forth above, Tarkett AB does not even show a vinyl carpet tile, but only relates to a latex composition which is useful for "a textile carpet." None of the secondary references relied upon by the Examiner would overcome this serious deficiency of Tarkett AB, since none of these references would provide proper motivation to alter the teachings of Tarkett AB. Even if combinable, the secondary references would at most look at the latex formulation and the "textile carpet" in Example 1 of Tarkett AB and nothing else. Furthermore, the other serious deficiencies of the rejection, especially with respect to Gerace being non-analogous art and not teaching or suggesting microspheres for use in modular tiles would apply equally here.

With the Declaration evidence previously submitted and the various structural differences between modular carpet tiles and other carpet tiles, it is clear that the Examiner's rejection cannot stand and should be reversed.

c) The patentability of claim 65.

Claim 65 is dependent on claim 23. Claim 65 recites that the textile substrate is a 6-ft. wide carpet. The arguments and comments for patentability of claim 25 apply equally here and are incorporated in their entirety by reference. In addition, claim 65 strictly relates to a 6-ft. wide carpet which is completely different from other forms of carpet. As stated in the Declarations and in the patent application as well as the arguments above, a 6-ft. wide carpet is not taught or suggested by Tarkett AB or the other secondary references. Again, as with respect to the patentability of claim 64, the Examiner cannot simply take the position that Tarkett AB covers all forms of carpet and therefore would be obvious to make a 6-ft. wide carpet. This is purely speculative on the part of the Examiner and unsupported by the record. As shown in the Declarations and the present application, the structural requirements for a 6-ft. wide carpet are quite different from other forms of carpet and clearly Tarkett AB does not relate to such a carpet, nor does Tarkett AB provide any suggestion for making such a carpet. Tarkett AB, as stated above, only shows latex formulations for "a textile carpet."

In addition, Gerace, as stated above, is non-analogous art and does not even relate to carpet substrates and for that matter makes absolutely no reference to 6-ft. wide carpets. Clearly, there is no motivation to combine the references, and at best, the Examiner is using an "obvious to try" standard.

Accordingly, for the reasons set forth above, the combination of Tarkett AB, Levinstein, Shoshkes, and Gerace does not teach or suggest the claimed invention and the rejection of claim 65 should be reversed.

C. The Examiner's rejection of claims 29 and 30 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, and Gerace.

1. The Examiner's rejection.

At page 2 of the final Office Action, the Examiner rejects claims 29 and 30 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, and Gerace. According to the Examiner, Tarkett AB describes a foamed material suitable for carpet backings, and, included in the foamed material, are microspheres of alumina silicate. The Examiner acknowledges that Tarkett AB does not explicitly teach the claimed primary backing, adhesive pre-coat, intermediate backing layer, or reinforcement layer. However, the Examiner asserts that the undisclosed layers are well-known in carpets, as indicated by Levinstein and Shoshkes.

At page 4 of the final Office Action, the Examiner responds to the appellants' argument that Tarkett AB does not teach or suggest a plastisol carpet backing and that latex and plastisol formulations are not equivalent to one another. According to the Examiner, the examples in Tarkett AB refer to "delamination strengths." Therefore, the Examiner concludes that Example 2 of Tarkett AB must be laminated in order to produce a property of delamination strength. The Examiner also asserts that the only substrate Tarkett AB teaches is a carpet in Example 1. Thus, the Examiner disagrees with the appellants' conclusion regarding the teaching of Tarkett AB.

The Examiner acknowledges that the combined art of Tarkett AB, Levinstein, and Shoshkes does not teach polymeric microspheres. However, the Examiner asserts that Gerace teaches PVC plasticol coatings and adhesives having hollow thermoplastic

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

microspheres therein. At page 5 of the Office Action, the Examiner responds to the appellants' argument that Gerace is non-analogous art. The Examiner asserts that while Gerace is not specific to carpet substances, Gerace is directed to plastisol coatings in general. According to the Examiner, since plastisol coatings are known to be employed in carpets, the Examiner contends that Gerace is analogous art.

The Examiner also asserts that although the cited art does not explicitly teach the density of the claimed carpet, it is reasonable to presume that the carpet made according to the cited references would meet the density range claimed by the appellants. The Examiner indicates that support for this presumption is found in the use of similar materials and the similarity of the final products.

For the following reasons, the Examiner's rejection should be reversed.

2. The Appellants' reply to the Examiner's rejection of claims 29 and 30 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, and Gerace.

a) The patentability of claims 29 and 30.

In terms of the claims at issue, the following summary is provided:

Claims 29 and 30 are dependent on claim 23.

Claim 29 recites that the textile substrate has a density of from about 20 to about 45 lb/ft³ density.

Claim 30 recites that the textile substrate has a density of from about 20 to about 30 lb/ft³ density.

With respect to the merits of the rejection, the densities of the textile substrate

recited in the claimed invention are not taught by the combination of Tarkett AB, Levinstein, Shoshkes, and Gerace. The comments and arguments set forth above with respect to the rejection of claim 23 by the Examiner in view of these same references applies equally here, and these comments and arguments are incorporated in their entirety by reference herein. As previously stated, these combined references do not teach or suggest a textile substrate as claimed.

The Examiner asserts that "it is reasonable to presume that a carpet made according to said art would meet the density range claimed by the Applicant." See page 6 of March 29, 2002 Office Action. However, the Examiner provides no support for this position. It is important for the Board to appreciate that the textile substrate as claimed in claim 23 permits one to achieve an excellent density for the textile substrate as recited in claims 29 and 30. These density ranges are not automatically achieved by any textile substrate, but are achieved, in part, using the microspheres set forth in claim 23 (and further described in the present application) along with the particular polymer components recited in claim 23. The Examiner at best can only take the position that it is "presumed" that the carpet made in the art would meet this density range, but has provided absolutely no concrete support for making such a conclusion. An Examiner's rejection cannot be based on presumptions or speculation. How can the Examiner make the assumption, for instance, that the textile substrate of Tarkett AB has the same density range when the textile carpet of Tarkett AB is based on Example 1 and relates to a latex composition, which is different from the vinyl compound set forth in claims 29 and 30? Furthermore, how can the Examiner make the assumption that the density range of

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

Example 2 of Tarkett AB would be the same as claims 29 and 30 when the materials do not even relate a textile carpet and the microspheres are ceramic as opposed to polymeric? Furthermore, how can the Examiner take the position that one could readily substitute the microspheres of Gerace, which is non-analogous art, and achieve a composition that could be used as a textile carpet? It is clear that the Examiner provides no reasonable foundation for making such a conclusion.

In addition, the attached Declarations further support the uniqueness of these density ranges with respect to the textile substrate described in claim 23.

Thus, it would not be obvious to achieve these density requirements in view of the cited art.

Accordingly, for the reasons set forth above, the combination of Tarkett AB, Levinstein, Shoshkes, and Gerace does not teach or suggest the claimed invention, and the rejection of claims 29 and 30 should be reversed.

D. The Examiner's rejection of claim 31 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, and Gerace.

1. The Examiner's rejection.

At page 2 of the Office Action, the Examiner rejects claim 31 under 35 U.S.C. §103(a) as being unpatentable over the cited Tarkett AB, Levinstein, Shoshkes, and Gerace. According to the Examiner, Tarkett AB describes a foamed material suitable for carpet backings, and, included in the foamed material, are microspheres of alumina silicate. The Examiner acknowledges that Tarkett AB does not explicitly teach the claimed primary backing, adhesive pre-coat, intermediate backing layer, or reinforcement

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

layer. However, the Examiner asserts that the undisclosed layers are well-known in carpets, as indicated by the cited Levinstein, Shoshkes, and Higgins.

At page 4 of the Office Action, the Examiner responds to the appellants' argument that Tarkett AB does not teach or suggest a plastisol carpet backing and that latex and plastisol formulations are not equivalent to one another. According to the Examiner, the examples in Tarkett AB refer to "delamination strengths." Therefore, the Examiner concludes that Example 2 of Tarkett AB must be laminated in order to produce a property of delamination strength. The Examiner also asserts that the only substrate Tarkett AB teaches is a carpet in Example 1. Thus, the Examiner disagrees with the appellants' conclusion regarding the teaching of Tarkett AB.

The Examiner acknowledges that the combined art of Tarkett AB, Levinstein, and Shoshkes does not teach polymeric microspheres. However, the Examiner asserts that Gerace teaches PVC plastisol coatings and adhesives having hollow thermoplastic microspheres therein. At page 5 of the Office Action, the Examiner responds to the appellants' argument that Gerace is non-analogous art. The Examiner asserts that while Gerace is not specific to carpet substances, Gerace is directed to plastisol coatings in general. According to the Examiner, given that plastisol coatings are known to be employed in carpets, the Examiner contends that Gerace is analogous art.

The Examiner acknowledges that the prior art does not explicitly teach delamination values. However, the Examiner asserts that a carpet made according to the cited references would meet the presently claimed delamination values, given that the prior art carpet meets the structural and compositional limitations of the claimed invention.

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

For the following reasons, the Examiner's rejection should be reversed.

2. The Appellants' reply to the Examiner's rejection of claim 31 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, and Gerace.

a) The patentability of claim 31.

In terms of the claim at issue, the following summary is provided:

Claim 31 is dependent on claim 23. Claim 31 recites that the secondary backing and the primary backing are affixed such that there is no delamination under ASTM D-3936. The comments set forth above with respect to the patentability of claim 23 over the same cited art applies equally here and is incorporated herein in its entirety by reference.

With respect to the merits of the rejection, the lack of delamination set forth in claim 31 of the present application is not is not taught or suggested by Tarkett AB, Levinstein, Shoshkes, and Gerace.

Claim 31 specifically recites no delamination under ASTM Test D-3936. At best, the Examiner can only guess that the carpet of the cited art has the same delamination value. However, the Examiner's assumption has many problems. First, the Examiner is making, again, another assumption regarding what the prior art shows and this is strictly based on speculation.

First, the latex formulation of Example 1, which is the only example that refers to a textile carpet is a different formulation and therefore, the Examiner's assumption that since the formulations are the same, the delamination strength would be the same is wrong. The formulations are not the same, so therefore one cannot make this assumption. With respect to Example 2 of Tarkett AB, as indicated, this does not relate to a textile carpet, and second,

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

does not use the same type of microspheres. Thus, again, the Examiner's assumption cannot be given any weight since the same formulations are not used. The Examiner's attempt to incorporate the microspheres of Gerace into the formulation of Tarkett AB has many problems as described in great detail above. Gerace is non-analogous art and has nothing to do with textile substrates. In addition, not all textile substrates automatically have the delamination set forth in claim 31. The Examiner cannot simply make this assumption. Furthermore, as described in the present application, at, for instance, page 20 of the present application, this delamination is quite impressive.

Interestingly, the very disclosure relied upon in Tarkett AB refers to a delamination strength that is only twice that of a foam having calcite as a filler. However, this clearly would indicate that there was some delamination occurring. If no delamination occurred, the example would say so. Thus, even the very example relied upon by the Examiner, which does not relate to textile carpets, still refers to some delamination occurring and does not even refer to a specific test. Thus, at best, Tarkett AB suggests delamination occurring with the formulations set forth in Tarkett AB. The secondary references relied upon by the Examiner do not overcome this serious deficiency, as described earlier, and at best, the combination of all these references provides "an obvious to try" standard which is the improper standard.

Accordingly, for the reasons set forth above, the combination of Tarkett AB, Levinstein, Shoshkes, and Gerace, does not teach or suggest the claimed invention, and the rejection of claim 31 should be reversed.

E. The Examiner's rejection of claims 32-34, 58, 59 and 61 under 35 U.S.C. §103(a)

as being unpatentable over Tarkett AB, Levinstein, Shoshkes, and Gerace, and further in view of Joslyn et al. (U.S. Patent No. 3,708,441).

1. The Examiner's rejection.

At page 2 of the Office Action, the Examiner rejects claims 32-34, 58, 59, and 61 under 35 U.S.C. §103(a) as being unpatentable over the cited Tarkett AB, Levinstein, Shoshkes, Gerace, and in further view of Joslyn et al. (U.S. Patent No. 3,708,441). The Examiner indicates that Tarkett AB describes a foamed material suitable for carpet backings, and, included in the foamed material, are microspheres of alumina silicate. The Examiner relies on Tarkett AB, Levinstein, Shoskes, and Gerace in the same manner with respect to the rejection of claim 23.

More specifically, the Examiner asserts that the identified claims limit the thermoplastic backing to having an activated blowing agent. The Examiner notes that a frothing technique is employed to produce the foam in Tarkett AB. However, the Examiner asserts that the use of blowing agents is a well-known alternative technique for producing foams by virtue of the Joslyn et al. reference, and therefore the selection of any one of the three equivalents (as taught by Joslyn et al.) would be within the level of ordinary skill in the art.

Additionally, with respect to the limitations of claim 59, which in part recites the foam expansion rate, the Examiner asserts that the amount of expansion is dependent upon process parameters, such as the amount of blowing agent present, the temperature, the pressure, etc. Thus, the Examiner asserts that the claimed expansion rate would have been obvious to one skilled in the art, since it has been held that discovering an optimum value of

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

a result effective variable involves only routine skill in the art.

At page 4 of the Office Action, the Examiner responds to the appellants' arguments that the Examiner has not explained why it would be obvious to actually incorporate a blowing agent to the invention of Tarkett AB. In response, the Examiner asserts that Tarkett AB clearly teaches foam backings that employ mechanical frothing, rather than chemical foaming (i.e., blowing agent). Additionally, according to the Examiner, Joslyn et al. clearly teaches that mechanical frothing and chemical foaming are recognized equivalents. According to the Examiner, the motivation presented in the rejection was based upon an art recognized equivalence of blowing agents and mechanical frothing as methods of producing foams.

For the following reasons, the Examiner's rejection should be reversed.

2. The Appellants' reply to the Examiner's rejection of claims 32-34, 58, 59 and 61 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, and Gerace, and further in view of Joslyn et al. (U.S. Patent No. 3,708,441).

a) The patentability of claims 32 and 34.

In terms of the claims at issue, the following summary is provided:

Claim 32 is dependent on claim 23. Claim 32 recites that the secondary backing further includes at least one activated blowing agent. Claim 34 is dependent on claim 32 and recites amounts of blowing agent.

The comments and arguments set forth above with respect to the patentability of claim 23 in view of these same references applies equally here and is incorporated in its entirety by reference herein. As stated, Tarkett AB does not even show a textile carpet

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

using the vinyl formulation set forth in the claimed invention and Gerace is non-analogous art. In addition, the Examiner's attempt to simply take the position that one can easily substitute mechanic frothing for an activated blowing agent is an assumption strictly made by the Examiner without support in the cited art. The Examiner does not take into account the various components used and the result of taking one component out and substituting another. Clearly, the properties would be affected by such a substitution and this has not been addressed by the Examiner.

While the Examiner asserts that it is known to use blowing agents, the Examiner has not explained why it would be obvious to actually incorporate a blowing agent into Tarkett AB. Certainly, Tarkett AB mentions a large grouping of various ingredients that can be used, but not once mentions the presence of a blowing agent.

Furthermore, a foaming agent can have an effect on the overall product, and thus it is not readily apparent that a blowing agent can be used in Tarkett AB. The interchangeability of mechanically stirring with air and the use of a blowing agent has not been shown by the Examiner.

Moreover, Joslyn et al. does not teach or suggest that mechanical frothing and chemical foaming are recognized equivalents. Joslyn et al. fully states that numerous ways exist in which gas is incorporated into plastisol to form the plastisol. According to Joslyn et al., the method for forming plastisols include chemicals (called waving agents) which release a gas under the desired conditions, bubbling a gas into the plastisol, and mechanically beating air or gas into the plastisol. According to Joslyn et al., the preferred technique to incorporate gas into plastisols is by the mechanical beating or whipping of a

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

gas into the plastisol. Accordingly, Joslyn et al. confirms that mechanical frothing is not equivalent to chemical foaming given that one is preferred over the other.

Accordingly, for the reasons set forth above, Tarkett AB, Levinstein, Shoshkes, Gerace, and Joslyn et al. do not teach or suggest the claimed invention, and the rejection of claims 32 and 34 should be reversed.

b) The patentability of claim 33.

Claim 33 is dependent on claim 32.

Claim 33 recites that the secondary backing and primary backing are affixed such that no delamination exist under ASTM D-3936.

The reasons set forth above, with respect to the patentability of claims 32 and 34 would also equally apply here. In addition, the arguments and comments set forth with respect to the patentability of claim 31 in view of the same cited references would apply equally here and all of these comments are incorporated in their entirety by reference herein.

As stated, Tarkett AB actually acknowledges some delamination occurring, and the Examiner's substitution of various components from other secondary references, some of which are non-analogous art, would clearly call into question any argument that the delamination would be the same since it is unclear what each substitution would have on the overall product.

Accordingly, for the reasons stated above, Tarkett AB, Levinstein, Shoshkes, Gerace, and Joslyn et al. do not teach or suggest the claimed invention, and the rejection of claim 33 should be reversed.

c) The patentability of claims 58 and 61.

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

Claim 58 recites that the secondary backing is casted onto the primary backing. Claim 61, which is dependent on claim 58, recites that the primary backing comprises a textile substrate. The term "casted onto" clearly describes the physical state and the interaction that occurs between the secondary backing and the primary backing. When a secondary backing is casted onto a primary backing, the type of adherence between the two layers is clearly understood by one skilled in the art. This is a unique advantage of one embodiment of the present application.

Unlike other technologies, which require formation, and then lamination, the claimed invention can be prepared in a single step, in which the foam is casted on the backing and no foam cells need to be formed during the foaming process. This technique offers several advantages. First, the one-step method offers substantial advantages in terms of cost and efficiency, which reduces the overall cost of the finished product. For instance, one would not need a separate machine to laminate the final product. Additionally, the blowing rates and conditions suggested in the cited references would not produce a uniform product and would also require higher temperatures. In other words, the claimed invention creates better uniformity in the final product at lower temperatures. Both of these factors are highly important in a manufacturing process.

Second, the casted product offers improved strength. Testing performed by the real parties in interest shows that carpet tiles produced by the casting method are extremely resilient to delamination. In fact, carpet tiles produced by the casting method cannot be delaminated without large amounts of physical force. In other words, the force necessary to produce delamination must be so extreme that the tiles are completely destroyed.

As noted above, one of the principal differences between carpet tiles and conventional broadloom carpets is the need for enhanced dimensional stability and resilience in carpet tiles. The present method of casting the foam on the backing leads to tiles having improved strength and dimensional stability, and these characteristics are of paramount importance for carpet tiles.

Therefore, it can readily be appreciated that products and methods described in the present application constitute a beneficial advance over the prior art, and are a particular advantage of the claimed invention.

The Examiner has not pointed to any portion of cited art that teaches or suggests this embodiment as recited in claim 58 of the present application. As explained above (and in the attached Declarations), casting produces a unique product that has an unusual resistance to delamination, a feature that is important in all carpet applications, but is especially important to modular carpet tiles, which require greater strength and resilience, as well as dimensional stability. None of the cited references applied by the Examiner teach or suggest a surface covering with a secondary backing that is casted onto a primary backing. The Appellant is at a loss as to how the Examiner could come to such a conclusion. As stated above, casting leads to a different bonding of two layers and this is quite different from traditional carpet preparations where two layers are individually formed and then the layers are bonded together by adhesive means or similar type of bonding means. With the present invention, and particularly claim 58, the secondary backing is casted onto the primary backing which permits excellent bonding of the two layers and permits, for instance, the no delamination achieved, in some of the dependent claims.

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

Accordingly, for the reasons stated above, Tarkett AB, Levinstein, Shoshkes, Gerace, and Joslyn et al. do not teach or suggest the claimed invention and rejection of claim 58 should be reversed.

d) The patentability of claim 59.

Claim 59 is dependent on claim 58.

Claim 59 recites that the secondary backing of claim 58 is expanded by about 1.0 to about 2.5 times. To those skilled in the art, this is a low expansion ratio and this is described in significant detail in the present application. The comments and arguments set forth above with respect to the patentability of claim 58 and the comments set forth above with respect to the patentability of claim 23 and the differences between the claimed invention and the cited references applies equally here and is incorporated by reference.

As mentioned in the present application, for instance at pages 12-14, an advantageously lower blow ratio can be used with the present invention which is different from conventional blow ratios, and the present invention permits a consistent thickness across the entire product. This certainly is not shown or suggested by any of the art cited by the Examiner. Thus, while the Examiner asserts that the various limitations set forth in the dependent claims of the present application would be obvious, the Examiner cannot point to any portion of the cited art which specifically states the various limitations or even suggests these types of goals and advantages with respect to the product claimed in the present application.

Again, the materials set forth in Tarkett AB are different and therefore the Examiner cannot make the assumption that the blow ratios would be the same as recited in claim 59 of

the present application. In addition, the Examiner's attempt to substitute non-analogous art into Tarkett AB would, first of all, not be possible, and second, would lead to unknown results. Thus, the Examiner's rejection amounts to assumptions and speculations and should be reversed.

F. The Examiner's rejection of claims 66 and 68 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, Gerace, and further in view of Ervin et al. (U.S. Patent No. 3,819,463), and Rodriguez's *Principles of Polymer Systems*, 2nd Ed., page 362.

1. The Examiner's rejection.

At page 3 of the Office Action, the Examiner rejects claims 66 and 68 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, Gerace, and further in view of Ervin et al. and Rodriguez. The Examiner essentially relies on Tarkett AB, Levinstein, Shoshkes, and Gerace in the same manner as in the rejection of claim 23.

The Examiner acknowledges that the prior art does not explicitly teach whether the foams are closed or open celled foams. However, the Examiner asserts that a closed-cell foam is obvious over the cited prior art. The Examiner suggests that Ervin et al. teaches a foam backing formed by foaming the backing composition between spaced platens in a press or parallel belts in order to obtain a constant thickness. As set forth at page 362 of Rodriguez, "closed-cell foams are typically produced in processes where some pressure is maintained during the cell formation process." The Examiner asserts that producing a closed-cell foam would have been a result of the process of maintaining

a constant backing thickness.

For the following reasons, the Examiner's rejection should be reversed.

2. The Appellants' reply to the Examiner's rejection of claims 66 and 68 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, Gerace, and further in view of Ervin et al. (U.S. Patent No. 3,819,463) and Rodriguez's Principles of Polymer Systems, 2nd Ed., page 362.

a) The patentability of claims 66 and 68.

In terms of the claims at issue, the following summary is provided:

Claim 66 is dependent on claim 32 and recites that the secondary backing is a closed-cell foam.

Claim 68 is dependent on claim 63 and recites that the secondary backing is a closed-cell foam.

With respect to the merits of the rejection, the combination of Tarkett AB, Levinstein, Shoshkes, Gerace, Ervin et al., and Rodriguez does not teach or suggest the claimed invention.

The arguments and comments set forth above with respect to Tarkett AB, Levinstein, Shoshkes, and Gerace as set forth above for claim 23 apply equally here and are incorporated in their entirety by reference. As stated, Tarkett AB does not even relate to textile carpets having vinyl-plasticizer formulations with polymeric microspheres. Also, the Examiner uses non-analogous art, Gerace, to substitute one type of microsphere for a completely different type of microsphere.

Furthermore, with respect to the Examiner's reliance on Ervin et al., the portion of

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

the reference cited by the Examiner does not indicate that any closed cell-foams were actually formed. Likewise, the Examiner does not demonstrate that the process of Ervin et al. is the same as used in practicing the present application. For instance, Ervin et al. describes a process using aqueous latex chemistry as set forth at column 2, lines 32-36. According to pages 1-6 of the present application, such aqueous latex chemistry differs from the claimed invention and has numerous disadvantages especially with respect to certain types of carpets.

As for the Rodriguez reference, the particular passage relied upon by the Examiner is not even related to textile substrates and only mentions "foamed polymeric materials." One skilled in the art would not conclude that this article would be applicable to textile substrates, since textile substrates are not even mentioned in this particular article.

Furthermore, the Examiner relies on Ervin et al., which relates to aqueous latex chemistry, and also relies on a portion of Tarkett AB which uses a plasticizer with PVC. One skilled in the art would not combine PVC/plasticizer chemistry with aqueous latex chemistry since the two systems are incompatible. Thus, it is not obvious to take the particular chemistries set forth in Ervin et al. and apply them to Tarkett AB.

Accordingly, for the reasons stated above, the combination of Tarkett AB, Levinstein, Shoshkes, Gerace, and further in view of Ervin et al. and Rodriguez does not teach or suggest the claimed invention, and the rejection of claims 66 and 68 should be reversed.

G. The Examiner's rejection of claim 67 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, Gerace, Joslyn et al., and further in

view of Ervin et al. and Rodriguez.

1. The Examiner's rejection.

At page 3 of the Office Action, The Examiner also rejects claim 67 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, Gerace, Joslyn et al., and further in view of Ervin et al. (U.S. Patent No. 3,819,463) and page 362 of Rodriguez's *Principals of Polymer Systems*, Second Edition. Essentially, the Examiner relies on the same art and for the same reasons as in the rejection of claims 66 and 68, as well as the rejection of claim 58 in the use of Joslyn et al.

The Examiner acknowledges that the prior art does not explicitly teach whether the foams are closed or open celled foams. However, the Examiner asserts that a closed-cell foam is obvious over the cited prior art. The Examiner suggests that Ervin et al. teaches a foam backing formed by foaming the backing composition between spaced platens in a press or parallel belts in order to obtain a constant thickness. As set forth at page 362 of Rodriguez, "closed-cell foams are typically produced in processes where some pressure is maintained during the cell formation process." The Examiner asserts that producing a closed-cell foam would have been a result of the process of maintaining a constant backing thickness.

For the following reasons, the Examiner's rejection should be reversed.

2. The Appellants' reply to the Examiner's rejection of claim 67 under 35 U.S.C. §103(a) as being unpatentable over Tarkett AB, Levinstein, Shoshkes, Gerace, Joslyn et al., and further in view of Ervin et al. and Rodriguez.

a) The patentability of claim 67.

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

In terms of the claim at issue, the following summary is provided:

Claim 67 is dependent on claim 58 and recites that the secondary backing is a closed-cell foam.

With respect to the merits of the rejection, the combination of Tarkett AB, Levinstein, Shoshkes, Gerace, Joslyn et al., and further in view of Ervin et al. and Rodriguez does not teach or suggest a claimed invention.

The arguments set forth above with respect to the patentability of claim 58 and the patentability of claims 66 and 68 in view of these same references applies equally here and these arguments are incorporated in their entirety by reference herein. As a summary, Tarkett AB does not even relate to textile carpets having vinyl-plasticizer formulations. Also, the Examiner attempts to combine non-analogous art, Gerace, with Tarkett AB. The problems of doing this have been discussed above in great detail.

Furthermore, the comments set forth above with respect to Joslyn et al. and the substitution of mechanical frothing with chemical foaming has been discussed in great detail above. Clearly, there are many reasons why one skilled in the art would not make this substitution. As stated, Joslyn et al. even confirms that mechanical frothing is not equivalent to chemical foaming. One is preferred over the other.

Furthermore, the Examiner's reliance on Ervin et al. and Rodriguez have significant problems as described above with respect to the rejection of claims 66 and 68. These arguments would apply equally here. Clearly, the sheer number of references alone begins to show the Examiner's attempt to use hindsight and a "obvious to try" standard in this rejection and in all of the rejections described above.

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

Furthermore, as stated above, with respect to claim 58, the Examiner has provided no justification for asserting that even a combination of the references would show a secondary backing casted onto a primary backing and wherein closed-cell foam is present in a secondary backing. The uniqueness of casting the layer has been described in great detail above.

Accordingly, for the reasons stated above, the combination of Tarkett AB, Levinstein, Shoshkes, Gerace, Joslyn et al., and further in view of Ervin et al. and Rodriguez does not teach or suggest a claimed invention, and the rejection of claim 67 should be reversed.

H. The Patentability of Claim 60.

Since claim 60 was not rejected in any rejection, this claim is allowable. No further comments are necessary.

Appellants' Brief on Appeal
U.S. Patent Application No. 09/228,954

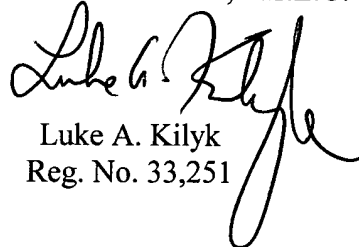
IX. CONCLUSION

For at least the reasons discussed above, it is respectfully submitted that the Examiner's rejection of all the pending claims is in error and should be reversed.

If there is any fee due in connection with the filing of this Brief on Appeal, please charge the fee to our Deposit Account No. 50-0925.

Respectfully submitted,

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Enclosure: Appendix I and Appendix II

APPENDIX I

APPENDIX I

23. A textile substrate comprising a primary backing with textile fibers extending upwardly from the backing and forming a surface:

and a secondary backing affixed to the bottom surface of the primary backing wherein said secondary backing comprises at least one thermoplastic material having polymeric microspheres dispersed therein, wherein said thermoplastic material comprises a polymer or copolymer of a vinyl compound, and at least one plasticizer.

24. The textile substrate of claim 23, wherein said textile substrate is a carpet.

25. The textile substrate of claim 23, wherein said textile substrate is a broadloom carpet, modular tile, or wide roll carpet.

26. The textile substrate of claim 23, further comprising at least one adhesive or polymeric pre-coat layer located beneath the primary backing.

27. The textile substrate of claim 26, further comprising at least one intermediate backing layer located beneath the adhesive or polymeric pre-coat layer.

28. The textile substrate of claim 27, further comprising at least one reinforcement material layer or stabilizer layer located beneath said intermediate backing layer.

29. The textile substrate of claim 23, wherein said textile substrate has a density of from about 20 to about 45 lb/ft³ density.

30. The textile substrate of claim 23, wherein said textile substrate has a density of from about 20 to about 30 lb/ft³ density.

31. The textile substrate of claim 23, wherein the secondary backing and the

primary backing are affixed such that there is no delamination under ASTM D-3936.

32. The textile substrate of claim 23, wherein said secondary backing further comprises at least one activated blowing agent.

33. The textile substrate of claim 32, wherein said secondary backing and primary backing are affixed such that there is no delamination under ASTM D-3936.

34. The textile substrate of claim 32, wherein said blowing agent is present in an amount of from about 0.5 to about 5.0 per 100 parts by weight thermoplastic material.

58. A surface covering comprising a primary backing and overlying and adhered to said primary backing is a secondary backing comprising at least one thermoplastic material having polymeric microspheres dispersed therein and at least one activated blowing agent, wherein said secondary backing is casted on said primary backing.

59. The surface covering of claim 58, wherein said secondary backing is expanded by about 1.0 to about 2.5 times.

60. The surface covering of claim 58, wherein said secondary backing and primary backing are affixed such that there is no delamination under ASTM D-3936.

61. The surface covering of claim 58, wherein said primary backing comprises a textile substrate.

63. A surface covering comprising a primary backing;
at least one adhesive or polymeric precoat layer located and affixed to the primary backing;

optionally at least one intermediate backing layer located beneath and affixed to the adhesive or polymeric pre-coat layer;

optionally at least one reinforcement material layer or stabilizer layer located and

affixed beneath the adhesive or polymeric pre-coat layer or intermediate backing layer;

and a secondary backing comprising at least one thermoplastic material located and affixed to either the adhesive or polymeric pre-coat layer or one of the optional layers; and

wherein polymeric microspheres are dispersed in at least one of the layers except the primary backing, wherein said thermoplastic material comprises a polymer or copolymer of a vinyl compound, and at least one plasticizer.

64. The textile substrate of claim 23, wherein said textile substrate is a modular carpet tile.

65. The textile substrate of claim 23, wherein said textile substrate is a six foot wide carpet.

66. The textile substrate of claim 32, wherein said secondary backing is a closed-cell foam.

67. The textile substrate of claim 58, wherein said secondary backing is a closed-cell foam.

68. The textile substrate of claim 63, wherein said secondary backing is a closed-cell foam.